



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,690	01/23/2004	Scott R. Smith	1001.2349101	7683
28075 7590 05/11/2010 CROMPTON, SEAGER & TUFTE, LLC 1221 NICOLLET AVENUE SUITE 800 MINNEAPOLIS, MN 55403-2420				
EXAMINER				
SHAHRESTANI, NASTIR				
ART UNIT		PAPER NUMBER		
3737				
MAIL DATE		DELIVERY MODE		
05/11/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/763,690

Applicant(s)

SMITH ET AL.

Examiner

NASIR SHAHRESTANI

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1-29, 31-50.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 and 31-50 is/are rejected.
- 7) ☒ Claim(s) 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/22)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-50 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the conductive carbon". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-29, 31-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Melzer et al. (U.S. 6,280,385 B1) in view of Zhong et al. (U.S. 2003/0100830 B1).

Melzer et al. teach an elongated shaft (fig. 1 and fig. 4a); and an electrically conductive path (element 2' and element 82) extending spirally about a portion of the shaft, and spaced from each other, wherein the conductive path is capable of being connected to a current source (very high conductivity).

Regarding claim 2, Melzer et al. further teach an inner surface (element 81) defining a lumen.

Regarding claims 3-6, Melzer et al. teach wherein the conductive path is defined by a material selected from the group consisting of a conductive polymer, conductive carbon, and a metal (col. 9 lines 25-34), also citing gold as a possible material to use.

Regarding claim 7 and 8, Melzer et al. teach a surgical instrument such as a catheter, is introduced into the examination object, whereby the catheter is provide with a micro-coil at its point (col. 3 lines 11-16).

Regarding claim 9, Melzer et al. further teach wherein the conductive path extends along an inner surface of the shaft (fig. 4b).

Regarding claim 10, Melzer et al. further teach providing two electrically conductive paths (fig. 7, elements 7 and 2") having perpendicular axis with respect to one another, which defines the directions to be counter.

Regarding claims 11, 12 and 14, Melzer et al. further teach wherein the shaft comprises an electrically insulating layer between portions of the conductive path which defines a band (col. 5 lines 35-41).

Regarding claims 15 and 17, Melzer et al. further teach providing an inductor and capacitor defining a resonance circuit (col. 3 lines 53-55) and teach that the resonance frequency is essentially equal to the resonance frequency of the applied high-frequency radiation of the magnetic resonance imaging system (col. 3 lines 34-37).

Regarding claims 32-37, Melzer et al. further teach for insertion, the stent is put onto a balloon catheter and placed at the implantation location by means of a catheter (col. 7 lines 21-28).

As stated in applicant's REMARKS, Melzer et al. teach in figure 7, a portion (element 6), is disposed between coils 21 and 22, which is sufficient to read on applicant's claim language with regards to a second coil portion. The fact that element 6 of Melzer et al. is dielectric is redundant since the claim language of the invention does not specifically necessitate the second coil to be conductive. The claim language merely states wherein the conductive path path...includes...a series of non-coiled elements.

Melzer et al. teach all the limitations of claim 15 but do not specifically teach the use of a fractal capacitor. However the use of a fractal capacitor, although not taught by Melzer et al. would only require a routine modification and it would have been obvious to one of ordinary

skill in the art to have provided such a capacitor in order to provide for the benefits as outlined by the applicant. Furthermore, tuning to MR frequency is shown by Melzer et al as described but Larmor tuning has not been specifically disclosed. The tuning of medical devices in conjunction with MR to that of a Larmor frequency of hydrogen would have been obvious to one of ordinary skill in the art at the time of invention since it would have been a routine adjustment to the system of Melzer et al.

Melzer et al. do teach the use of MRI contrast agents.

Zhong et al. teach implantable or insertable medical devices visible under magnetic resonance imaging (see title) wherein a contrast agent comprising a T1 relaxation agent is provided (par. 0006) comprising gadolinium. Zhong et al. further teach that any paramagnetic particles known in the art for use as MRI contrast agents may be utilized, as well as superparamagnetic oxides of such elements (par. 0062). The contrast agent is encapsulated within a hydrogel (a microporous material), the hydrogel then applied as a coating over the implantable device, hence providing MRI visibility (col. 0058). Zhong et al. further teach ultrasonic means of imaging the implantable device (par. 0002).

It would have been obvious to one of ordinary skill in the art at the time of invention to have modified the MR compatible implantable device as taught by Zhong et al. and to have provided a hydrogel coating for implantable materials containing contrast agents in order to improve visibility of the implantable device under MRI.

Allowable Subject Matter

Claim 30 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and

any intervening claims. The prior art of record does not teach nor fairly suggest the use of T1 relaxation agents as defined within the claim language, being at least disposed within two distinct marker bands and having different compositions, and wherein the first series of marker bands alternate with the second series of marker bands.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NASIR SHAHRESTANI whose telephone number is (571)270-1031. The examiner can normally be reached on Mon.-Thurs: 7:30-5:00, 2nd Friday: 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN CASLER/
Supervisory Patent Examiner, Art Unit
3737

/Nasir Shahrestani/
Examiner, Art Unit 3737